

REMARKS

Applicants thank the Examiner for the thorough consideration given the present application. Claims 1, 6-9, 11, 12, 15-17 and 21 are currently being prosecuted. The Examiner is respectfully requested to reconsider his rejections in view of the Amendments and remarks as set forth below.

Entry of Amendment

Applicants submit that the entry of the present Amendment is appropriate since the amendments to claims 1 and 8 merely incorporate the limitations of claims 13 and 10, respectively, which have been indicated as allowable by the Examiner.

Telephone Interview

Applicants note with appreciation the telephone interview with Examiner Dougherty on December 9, 2002. At that interview, it was determined that the Examiner's indication that claims 10 and 13 were allowed was actually meant to be an indication that those two dependent claims would be allowable if rewritten in independent form. Also, arguments against the rejection of claim 15 were presented. The Examiner indicated that these arguments would be considered upon filing. Accordingly, the present Amendment is presented.

Allowable Subject Matter

It is gratefully acknowledged that the Examiner considers claims 6, 7, 9, 11, 12, 16, 17, and 21 as being allowable. Further, it is acknowledged that the Examiner considers the subject matter of claims 10 and 13 as being allowable if rewritten in independent form. By way of the present Amendment, claims 10 and 13 have been rewritten in independent form by adding their limitations to claims 1 and 8 from which they depend. Accordingly, these claims are also in condition for allowance.

Rejection Under 35 U.S.C. § 102

Claims 1-3 and 8 stand rejected under 35 U.S.C. § 102 as being anticipated by Fastenmeier et al. (EP 0173761). By way of the present Amendment, claims 2 and 3 have been cancelled rendering the rejection of these claims moot. Claims 1 and 8 have been amended to include the limitations of claims 13 and 10, respectively. Accordingly, the rejection of these claims is overcome.

Rejection Under 35 U.S.C. § 103

Claims 4, 5, 8, 14, 15, and 18-20 stand rejected under 35 U.S.C. § 103 as being obvious over Fastenmeier et al. in view of Haring (DE 4035828). This rejection is respectfully traversed.

By way of the present Amendment, claims 4, 5, 14 and 18-20 have been cancelled rendering this portion of the rejection moot. Claim 8 has been amended to include the

limitations of claim 10 and accordingly overcomes this rejection as indicated by the Examiner.

In regard to claim 15, it is pointed out that this claim recites a combination of elements describing an ultrasonic cleaning apparatus, including a power amplifier, a detector and a controller, where the power is in a range of 1 - 10 W and the difference between the resonance frequency and the anti-resonance frequency is 1.5 kHz or more.

The Examiner admits that the Fastenmeier et al. reference does not disclose a voltage control oscillation device which keeps the phase difference within plus or minus 30% or show an ultrasonic phone for amplifying an oscillation speed where the maximum value of the speed is in a range of 1 - 10 mHz. The Examiner also admits that the Haring reference does not show an explicit power amplifier for amplifying an amplitude of a signal to the ultrasonic oscillator and doesn't show a controller for controlling the frequency of the signal. Further, in regard to the previous argument that the references do not show the difference between the resonance and anti-resonance frequencies of 1.5 kHz or more, the Examiner states that this can be regarded as a goal of the invention and not further limiting.

Applicants disagree with this understanding of that limitation. In particular, the Examiner is referred to Figure 19 of the present application where a table is shown regarding the examples described in the specification. The right hand column of the table, labeled "oscillation stability" indicates that the best stability (indicated by a double circle) occurs in those examples where the difference between the resonance frequency and the anti-resonance frequency is 1.5 kHz or more. In particular, this occurs in examples 2, 4

and 7. Since this range of frequency difference presents a very stable oscillation, this particular range of values is not merely a goal, but obtains a particularly advantageous result. This is not foreseen in either of the references and accordingly, Applicants submit that claim 15 defines thereover.

Furthermore, it is noted that in the cited Kraus et al. reference (U.S. Patent No. 6,161,418), the difference between the resonance frequency and the anti-resonance frequency as shown in Figure 17 is 1.3 kHz. Accordingly, this reference also suggests that a difference of 1.5 or more would not be obvious.

CONCLUSION

In view of the above remarks, it is believed that the claims clearly distinguish over the patents relied on by the Examiner, either alone or in combination. In view of this, reconsideration of the rejections and allowance of all the claims are respectfully requested.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Mr. Robert F. Gnuse (Reg. No. 27,295) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

Attached hereto is a marked-up version of the changes made to the application by this Amendment.

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If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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Attachment: Version with Markings to Show Changes Made